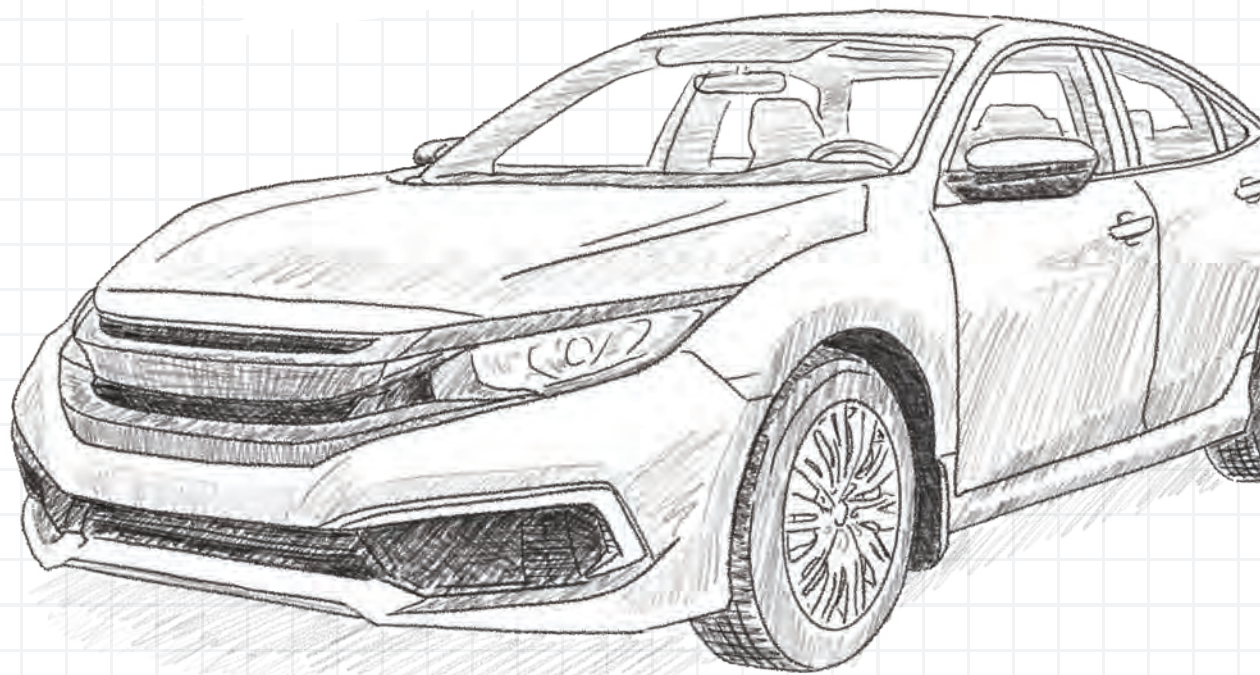


consumer **MATH** *for Real Life*



#NotConsumedHomeschool

AN INDEPENDENT LEARNING CURRICULUM

Table of Contents

Unit 1: The Journey

1.1 A Biblical View of this Journey Called Life	8
1.2 How To Get Where You're Going	9
1.3 Big Decisions	12
1.4 Pursuing Your Path.	14
1.5 Project—Which Path?	16

Unit 2: Making Money

2.1 A Biblical View of Making Money	18
2.2 Your First Job	20
2.3 Compensation	22
2.4 Commissions and Tips	24
2.5 Benefits	26
2.6 Project—Compensation in Your Future Career	28
2.7 Payroll Deductions.	29
2.8 Income Tax	30
2.9 How to File Annual Income Tax Forms	33
2.10 Project—Filing Your Taxes	35
2.11 Working for Yourself Part 1	36
2.12 Working for Yourself Part 2	37
2.13 Project—Creating a Business Plan.	39

Unit 3: Banking

3.1 A Biblical View of Banking	45
3.2 Types of Banks	47
3.3 Opening a Checking Account.	48
3.4 Debit Cards	50
3.5 Making Checking Account Deposits.	52
3.6 Writing Checks	54
3.7 Making Withdrawals	57
3.8 Cashier's Checks and Money Orders	59
3.9 Balancing Your Checkbook	61
3.10 Savings Accounts.	64
3.11 Project—Which Bank is Right for You?	66

Unit 4: Insurance

4.1 A Biblical View of Insurance	68
4.2 Learning the Lingo.	69
4.3 Life Insurance	71
4.4 Project—Life Insurance.	72
4.5 Health Insurance.	74
4.6 Other Kinds of Insurance.	77
4.7 Project—Vetting Insurance Companies	79

Unit 5: Investing

5.1 A Biblical View of Investing.	80
5.2 What is an Investment?.	82
5.3 Putting Your Money to Work.	84
5.4 Figuring Out Compounding Interest	87
5.5 When to Invest.	88
5.6 Stocks	90
5.7 Dividends on Stock	93
5.8 Capital Gains and Losses	95
5.9 Bonds and Mutual Funds	97
5.10 A 401(k) as an Investment	99
5.11 Project—Investing in Retirement	100

Unit 6: Budgeting

6.1 A Biblical View of Budgeting	102
6.2 Everyone Needs a Budget	103
6.3 Types of Expenses	104
6.4 Estimating Expenses	107
6.5 Project—Developing a Monthly Budget as a Teen	108
6.6 Paying Bills	113
6.7 Project—Family of Four Monthly Budget.	114

Unit 7: Saving

7.1 A Biblical View of Saving	117
7.2 The “Why” Behind Saving.	119
7.3 The “How” Behind Saving.	120
7.4 Short-term Savings Goals	123
7.5 Long-term Savings Goals and Emergency Fund	125
7.6 Project—Setting Savings Goals	127

Unit 8: Borrowing Money

8.1 A Biblical View of Borrowing Money	129
8.2 Should You Borrow Money?	131
8.3 Understanding Credit Scores	133
8.4 What You Need to Know About Credit Cards	134
8.5 Loans	137
8.6 Project—The Price of Paying in Installments	139

Unit 9: Housing

9.1 A Biblical View of Home	140
9.2 How Big?	142
9.3 Renting vs. Buying	144
9.4 Finding a Rental House	146
9.5 Rental Terms and Agreements	148
9.6 Protection for Renters	150
9.7 Buying a House	151
9.8 Mortgages	153
9.9 Project—Establishing a Home	154

Unit 10: Maintaining Your Home

10.1 A Biblical View of Maintaining Your Home	158
10.2 The Cost of Maintaining Your Home	160
10.3 Home Improvements—Replacing Flooring	163
10.4 Creating a Raised Flower Bed	165
10.5 Property Taxes and Insurance	167
10.6 Project—Pricing a Roof Replacement	169
10.7 Bonus Project—Adding a Fence	171

Unit 11: Shopping for Food

11.1 A Biblical View of Food	172
11.2 Your Food Budget	173
11.3 Food Cost Fluctuation	176
11.4 Getting the Most for Your Money	177
11.5 Eating Out	179
11.6 Ways to Reduce Food Expenses	181
11.7 Project—Feeding a Family of Four	183

Unit 12: Cooking and Baking

12.1 A Biblical View of Preparing Food	185
12.2 Food and Measurement	186
12.3 Following Recipes	189
12.4 Project—Cooking for a Crowd	192

Unit 13: Transportation

13.1 A Biblical View of Transportation.	195
13.2 Transportation	196
13.3 Buying a Car—New or Used?	198
13.4 Paying for a Car	199
13.5 Expenses Part 1	201
13.6 Expenses Part 2.	203
13.7 Project—Planning How to Save for a Car	204

Unit 14: Clothing

14.1 A Biblical View of Clothing	206
14.2 Clothing Budget	207
14.3 Price, Fit, and Quality	208
14.4 What to Do With Clothes You No Longer Use	210
14.5 Project—The Cost of Clothing	212

Unit 15: Bargain Shopping

15.1 A Biblical View of Bargain Shopping	214
15.2 Recognizing Good Sales	216
15.3 Evaluating Sales and Deals	218
15.4 Project Part 1—Finding Bargains.	220
15.5 Project Part 2—Upcycling	221

Unit 16: Vacation

16.1 A Biblical View of Vacation	222
16.2 Let's Take a Vacation.	223
16.3 How to Get Where You Want to Go	224
16.4 Time Zones	226
16.5 Where You'll Stay.	227
16.6 What You'll Eat	229
16.7 How You'll Get Around.	231
16.8 Traveling Abroad	232
16.9 Project—Planning a Family Vacation	234



Commissions and Tips

In our last lesson, you learned the difference between hourly and salary compensation. Today, we will discuss two types of compensation NOT directly provided by an employer.

Commission

Some jobs can range in the amount they pay due to **commission**—compensation paid to an employee based on the amount of sales they have generated for the company. This compensation is usually calculated as a percentage of the money made through these sales.

Commission tends to vary greatly, because this type of compensation depends on the skill of the employee to persuade, the kind of product or service offered, the time of year, the decision of the customer, and many more factors. This fluctuation in pay can be beneficial when an employee is making a large number of sales, but also very difficult when sales decrease.

Some companies pay their sales employees **base pay** (a set amount of income) plus commission. This base pay may be hourly compensation or salary. Other companies, however, pay no additional compensation. These jobs are commission-only, which means that when there are no sales, there is also no compensation.

Practical Application

Work through the word problems below to see an example of base pay plus commission compared to commission-only compensation.

→ Tucker receives a \$1,600 monthly salary as well as 5% commission on all sales. If he sells \$20,000 worth of cable television subscriptions in one month, how much has Tucker earned in total? Use the equations below to help you. (Hint: Remember, percentages appear as decimals in calculations. Example: 5% = 0.05)

commission percentage × dollar amount of product sold = earned commission

salary + earned commission = total earned \$ _____

→ Sam receives no base pay but receives a 20% commission on all sales of home security systems. If he sells \$20,000 worth of home security systems in one month, how much has Sam earned in total?

\$ _____

→ The next month, Tucker only sells \$10,000 worth of cable television subscriptions, but he still earns \$2,100 because he receives base pay plus commission. How much will Sam earn if he sells \$10,000 worth of home security systems in one month?

\$ _____

Jobs where commission is part of the compensation can be highly profitable, but they often pose a certain amount of risk as well. Depending on the life circumstances you find yourself in, the risk may be worth it! But it is always wise to save and budget with that risk in mind.

Tips

Another form of compensation an employee might receive from someone other than their employer is a **tip**. Tips are an important part of compensation for those who work in service industries such as restaurant servers, food delivery drivers, barbers, beauticians, taxi drivers, and nannies. Since tips are usually optional (though often expected) and vary depending on the customer's satisfaction with the service, they can be a substantial source of income or a very small one. Typically tips range from 5% to 20% of the total bill, depending on the service provided. There is no way to estimate how much that would be because there are so many variables (the type of business, the time of day, the day of the week, the weather, etc.).

When considering a job where you can expect to receive tips, something to watch out for is employers who pay very little because of the opportunity an employee has to earn compensation from tips. In some states, it is legal to pay servers below minimum wage. Though tips may truly make up for this low hourly rate, this is a fairly unstable mode of compensation.

Because tips are often given by the customer directly to the service worker, the worker bears the responsibility for recording and reporting their tips for tax purposes. Per the IRS (Internal Revenue Service), employees who receive tips must keep a daily tip record, report their tips to their employer (unless the total is less than \$20 per month), and report all their tips on an individual income tax return. We will learn more about tax responsibilities in a future lesson.

Practical Application

→ Compare the monthly earnings for a cashier and a server for a 40 hour/ week job (160 hours/ month).

Retail store cashier: \$15/hour = \$ _____ monthly

Restaurant server: \$3/hour = \$ _____ monthly + tips

→ Determine how much money you would have to make in tips as a restaurant server to earn the same amount as the retail store cashier.

\$ _____

→ That seems like a large amount! How much would you have to earn in tips per hour?

\$ _____

→ In your opinion, would it be better to work a job that pays \$15 an hour or one that pays \$3 an hour plus tips? Why?

Types of Expenses

As you begin preparing your budget, you'll notice there are several different types of expenses to include.

Fixed Expenses: Fixed expenses are regular, recurring costs that come up from month to month. These expenses are usually necessary for daily living. Examples of fixed expenses include mortgage or rent payments, insurance premiums, and loan payments (such as car loans or student loans). Other fixed expenses include subscription services, such as a streaming service or gym membership.

Variable Expenses: Variable expenses are costs that change from month to month based on your choices and needs. While you can't change fixed expenses, variable expenses can be adjusted more easily to fit your budget. These expenses include groceries, gasoline, clothing, utility bills (such as water and electricity) and personal care items.

Periodic Expenses: Periodic expenses are expenses that don't occur on a regular basis but still need to be planned for. They can be predictable or irregular. Periodic expenses include car maintenance, home repairs, medical bills, and property taxes.

Discretionary Expenses: These are non-essential expenses that are entirely optional. They are based solely on your personal choice and lifestyle and are often considered "wants" rather than "needs." Discretionary expenses include vacations, hobbies, dining out, entertainment (concerts, movies, video games), and other non-essential purchases.

Practical Application

→ Make a list of the discretionary expenses you had in the past month. Try to remember how much you spent on each item, and write that amount beside the expense.

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

Item: _____ Cost: \$ _____

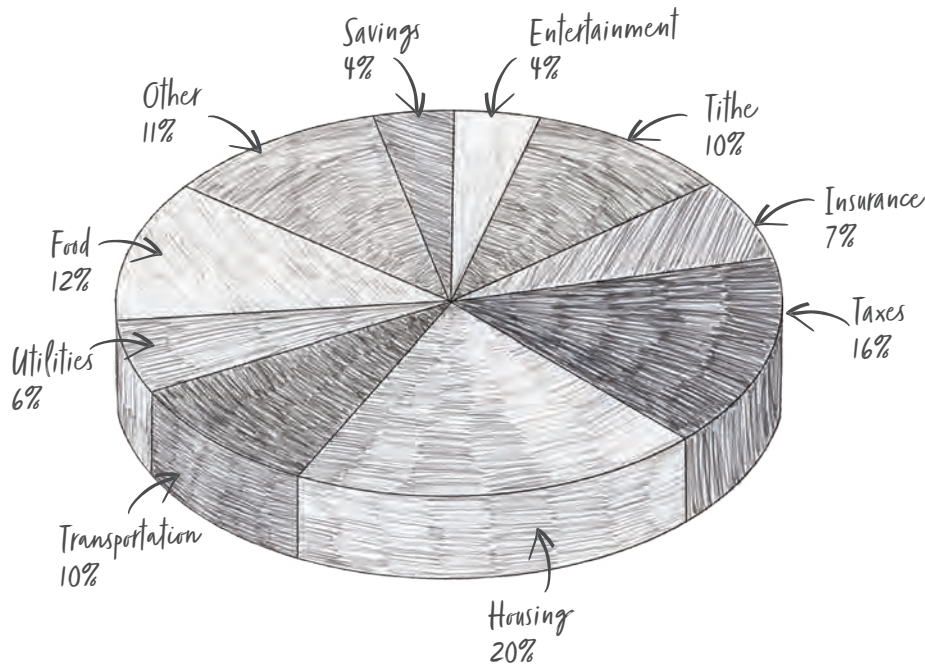
Add those amounts. How much were your discretionary expenses all together?
Total: \$



In order to see how much money is going toward each kind of expense every month, you will want to create budgeting categories for them. Some example categories are listed for you in the margin.

You can also break these categories down into smaller ones. For example, you can break the Utilities category down into smaller categories of Power, Water, and Internet. You can break Transportation down into Oil Changes, Gas, New Tires, Taxes, Tag Renewal, and Repairs.

Using charts and graphs is a visual way to get a better understanding of where your finances are going. This pie chart shows a typical household budget.



Housing
Utilities
Food
Transportation
Medical
Subscriptions
Pet Care
Entertainment
Personal Expenses
Miscellaneous Expenses
Loan Payments

Practical Application

Answer the following questions using the pie chart above.

- How much of your income should go to housing? _____
- How much should go to Utilities? _____
- If someone earns \$52,000 a year, how much can they spend on groceries each month? To solve this, you first have to find out how much they make in a month. There are 12 months in a year, so divide \$52,000 by 12. Then, multiply this amount by the percentage for groceries indicated on the pie chart.

Monthly amount for Groceries: \$ _____

The Cost of Maintaining Your Home

When you own a home instead of renting one, you are responsible for all of the costs for its maintenance and repairs.

Practical Application

Do some research to find out how much the items or services below will cost.

→ Lawn Care

How much does it cost to have someone else care for your yard? \$ _____

How much would it cost if you bought the equipment yourself? \$ _____

Price the following items.

Push mower = \$ _____

Riding mower = \$ _____

Weed eater = \$ _____

Clippers = \$ _____

Leaf blower = \$ _____

Rake = \$ _____

Shovel = \$ _____

→ Cleaning Gutters

You could do this yourself, or you could hire someone to come do it. If you do it yourself, you'll need to purchase a ladder.

Ladder = \$ _____

Cost to have someone else do it: \$ _____

→ Pest Control

You may find unwanted insects or spiders in your home. You could spray them yourself or use non-toxic traps. However, these often don't get rid of all of the pests. Pest control companies spray not only in your house but around the outside and underneath it as well.

Cost to hire a pest control company: \$ _____

→ Security

You may live in an area where you need more security than just locks on the doors. You may need to invest in a security system for your house. Most alarm companies require a monthly fee. Research a couple companies to see what an average monthly fee would be.

• _____

Below are some less-frequent (but important!) home maintenance tasks. Do some research to find out how much each of these costs.

→ **HVAC Cleaning**

(This only needs to be done about once every five years.): \$ _____

→ **HVAC Replacement**

Even if you keep up with the regular cleaning and maintenance of your HVAC unit, it will eventually need to be replaced.

New HVAC unit = \$ _____

→ **Plumbing Repairs**

Since it's difficult to know how much a repair will cost unless you know just how long it will take to complete, look up the per hour price of plumbers instead. You can assume that a plumbing task would take at least 2 hours to finish. This cost also doesn't include materials. In addition, many companies charge a fee for the trip to your home to diagnose the problem and give you a quote on how much the job will cost.

Consultation Fee = \$ _____ Price per hour = \$ _____

→ **Roof Repairs**

Find an average cost for:

Minor repair \$ _____ Major repair \$ _____

How much would it cost to replace the whole roof?

Shingle \$ _____ Metal \$ _____

→ **Appliance Repairs**

Your refrigerator, stove, or dishwasher may seem like Old Faithful, but eventually it's going to need repairs. Most likely, you'll need to call in a repairman to fix it. Do some research to find the average price to repair each of these items. Also, find how much it would cost to replace them with a new one (which you will have to do eventually).

Refrigerator = repair \$ _____ replace \$ _____

Stove = repair \$ _____ replace \$ _____

Dishwasher = repair \$ _____ replace \$ _____

Washer = repair \$ _____ replace \$ _____

Dryer = repair \$ _____ replace \$ _____

Grocery List



Lunch

Sun: _____

Mon: _____

Tues: _____

Wed: _____

Thurs: _____

Fri: _____

Sat: _____

Dinner

Sun: _____

Mon: _____

Tues: _____

Wed: _____

Thurs: _____

Fri: _____

Sat: _____

Snacks and Drinks

Sun: _____

Mon: _____

Tues: _____

Wed: _____

Thurs: _____

Fri: _____

Sat: _____



As you see, because we need to round our answers, there is a chance the equation will not reverse perfectly. However, if the answers are not exactly the same, they will be very close. As far as temperature in cooking and baking goes, rounding to the hundredths place will give you as precise a temperature as you need.

Practical Application

→ Convert the following temperatures to Celsius.

$$89^{\circ}\text{F} = \underline{\hspace{1cm}}^{\circ}\text{C} \qquad 350^{\circ}\text{F} = \underline{\hspace{1cm}}^{\circ}\text{C} \qquad 32^{\circ}\text{F} = \underline{\hspace{1cm}}^{\circ}\text{C}$$

→ Convert the following temperatures to Fahrenheit.

$$45^{\circ}\text{C} = \underline{\hspace{1cm}}^{\circ}\text{F} \qquad 100^{\circ}\text{C} = \underline{\hspace{1cm}}^{\circ}\text{F} \qquad 32^{\circ}\text{C} = \underline{\hspace{1cm}}^{\circ}\text{F}$$

Volume or Mass?

As it does with temperature, the United States uses its own customary measuring system for other types of measurements. You're probably familiar with teaspoons, tablespoons, cups, pints, quarts, and gallons to measure volume, and ounces and pounds to measure weight. Depending on the situation, these units of measurement can be used for dry or wet ingredients.

The metric system, however, uses grams as its base measurement for **mass** and liters as its base measurement for **volume**. Generally, dry ingredients are measured by their mass and wet ingredients are measured by their volume.

When it comes to converting between metric measurements and U.S. customary measurements for volume and mass, it is usually easier to use an online calculator than to convert the measurements yourself. However, most food scales and glass measuring cups will enable you to measure in grams and liters if a recipe is written that way.

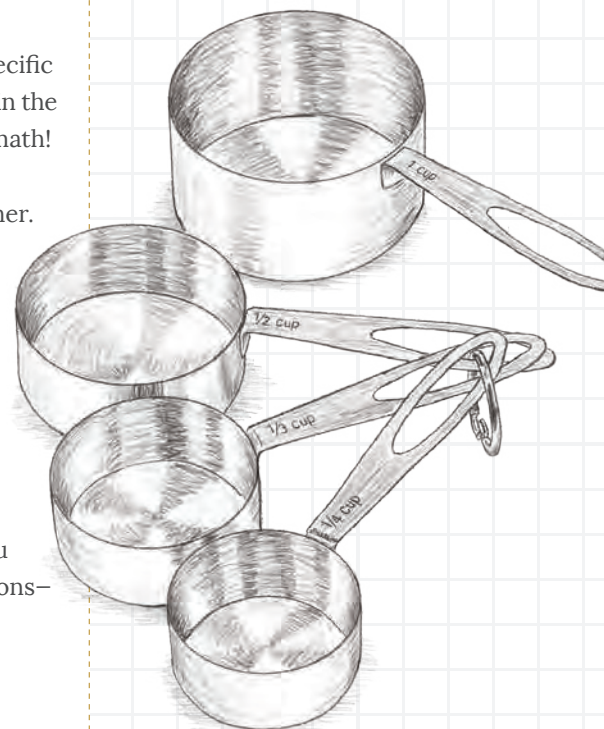
Thankfully, conversions within the same measuring system do not involve very specific equations. Instead, we use ratios to show relationships between measurements within the same system. Most of these conversions are just a matter of some simple mental math!

Look at the examples below and the ratios that show their relationship to each other.

$$\begin{aligned} 3 \text{ teaspoons (tsp)} &= 1 \text{ tablespoon (TBSP)} & (3:1) \\ 4 \text{ tablespoons (TBSP)} &= \frac{1}{4} \text{ cup (c)} & (4:1) \\ 16 \text{ tablespoons (TBSP)} &= 1 \text{ cup (c)} & (16:1) \\ 2 \text{ cups (c)} &= 1 \text{ pint (pt)} & (2:1) \\ 2 \text{ pints (pt)} &= 1 \text{ quart (qt)} & (2:1) \\ 4 \text{ quarts (qt)} &= 1 \text{ gallon (gal)} & (4:1) \end{aligned}$$

Whenever you can, it's best to use the biggest unit of measurement possible. If you needed 2 cups of flour, it would take a long time to measure that out using teaspoons—you might even lose count!

Volume refers to the amount of space taken up by an object. **Mass** refers to the amount of matter contained in an object.



Buying a Car—New or Used?

Depreciation is a reduction in the value of an asset with the passage of time, due in particular to wear and tear.

So you want to buy a car, but you don't know where to start. Well, by the end of this lesson, you should know a few things!

Maybe it seems like buying a brand new car is the best way to go—it won't need any repairs, is clean and nice, and hasn't been owned by anyone else! Sounds pretty perfect, right? Surprisingly, buying a new car is not usually the best move. So why is this?

First of all, the price of a new car is the most expensive that car will ever be unless the car becomes a collectible (which is not common). Even if you buy a brand new car and sell it the next day, **depreciation** ensures that the car will rarely have a resale value that is the same or higher than the price you paid for it.

Practical Application

→ Look up a car depreciation calculator online and use it to assess the value of your family's car(s).

.....

.....

.....

.....

Are you surprised about what you learned? Why or why not?

→ Answer the following questions filling in the chart below.

- ☐ If you could buy any car brand new, what would it be? What would your second and third choices be?
- ☐ Look up the exact car you want and write its brand-new price to the right of its name below.
- ☐ Now, using a social media marketplace or a used car website, search for the make and model of the car(s) you listed. How much does a 5-year-old car cost? A 10-year old one?

CAR	NEW PRICE	5-YEAR PRICE	10-YEAR PRICE

Price difference

5-year 10-year

|

↖ What is the exact price difference between the newest model of the car you want and the 5- and 10-year-old models? Record them in the margin.

Paying for a Car

When it comes to buying a car, there are so many options! You may put a cash payment down and have monthly payments in order to pay off the rest, pay for a car in full with cash, or lease a car for a certain amount of time. In order to make a wise decision about which of these methods you should use, you need to know a little more about each one.

Lease or Buy? If you need a car, the two ways you can get one are leasing or buying. So what's the difference?

Leasing

When you lease a car, you do not own it. Much like leasing an apartment, a lease agreement with a car dealership gives you the right to drive the car as long as you make your monthly payments. While leasing may allow you to drive a nicer car, you also must abide by the terms of the lease agreement which may include mileage limits, maintenance requirements, and wear and tear penalties. When the lease is up, you will not own a car. At that point, you must renew your lease or buy a car elsewhere, though some dealerships will allow you to buy the car you had been leasing if you want to.

Buying

When you buy a car, you take ownership of it. The car belongs to you and you are free to use it how you wish. You are also responsible to register it in your state, pay taxes on your purchase, care for it through necessary maintenance, and be sure you are covered by insurance. You may take out an auto loan in order to buy a car, and as long as you make your payments, when you pay it off in full, you will own the car entirely.

Paying For Your Car

When you decide to buy a car, you also have options! You may decide to take out an auto loan (review Unit 8), pay with your credit card, or you may choose to pay in full at the time of purchase. So what are the pros and cons of each?

Taking Out a Loan

You have already learned a lot about borrowing money and loans. Benefits of taking out a loan for a car include the possibility that you may be able to get a nicer car than you currently have the money to pay for. In addition, though you will have a monthly payment, you will own a car when you finish paying for it! Making your payments on time may also help you build your credit score. The main con or disadvantage of taking out a loan to buy a car is that you will have a monthly payment to make. In addition, if you miss a payment, the lender can take the car back since it serves as the collateral for that loan.

Paying with a Credit Card

For some, paying for a car with their credit card may be a way to earn rewards on their credit card account. This also eliminates the need for an auto loan. However, not all credit card companies will allow a purchase as large as a car. In addition, the interest rates on a purchase of this size may be high and cost you more money than you originally thought it might. It is helpful to be aware that most dealerships will also charge a percentage of the sales amount as a transaction fee if a card is used to pay.

Which of these seem like better options to you? Why?

Recognizing Good Sales



Probably the most important part of bargain shopping is learning to recognize good sales. When you can estimate how much an item will cost after the sale or discount being offered, you can see if you are actually willing to pay the discounted price or not. Sometimes knowing the sale price will help you compare that sale with another item's price and choose which option is best for you and your budget. Using mental math will enable you to do this! Let's look at two methods of calculating sales prices mentally.

Practical Application

Method #1

If the price of a pair of jeans is \$49.99, but there is a 30% sale, how do you estimate what they will cost? Round the price up to the nearest whole number so you have an easy number to work with.

$$\$49.99 \rightarrow \$50.00$$

Find 10% of the original price (\$50.00). Remember, ten percent is written as 0.1 in an equation, so you know when you multiply anything by 0.1, the decimal point in the original number moves to the left 1 time. (You can check this on a calculator with any number.)

$$0.1 \times 50.00 = 5.00$$

Multiply 5.00 (10% of the original price) by 3 to find 30%.

$$10\%(50) \times 3 = 30\%(50), \text{ so}$$

$$5.00 \times 3 = 15.00$$

Subtract 30% of \$50.00 (\$15.00) from \$50.00 and you have your total.

$$\$50.00 - \$15.00 = \$35.00$$

You will pay about \$35.00 for the jeans.

However, there is a way to do this a little bit faster! If you are getting a 30% discount, you know that instead of paying 100% of the price (\$50.00), you are actually paying 70% of the price ($100\% - 30\% = 70\%$). So instead of finding 30% and subtracting it from \$50.00, we can actually find the amount we will pay by finding 70% of \$50.00! Check out the example below.

Method #2

Round the price up to the nearest whole number. $\$49.99 \rightarrow \50.00

Find 10% of the original price (\$50.00). $0.1 \times 50.00 = 5.00$

Multiply 5.00 (10% of the original price) by 7 to find 70%.

$$10\%(50) \times 7 = 70\%(50), \text{ so } 5.00 \times 7 = 35.00$$

There you have it! By finding the percent of \$50.00 that you will be paying instead of the percent of the discount, you can cut out one whole step of mental math! However, if you like going through Method #1 better than Method #2, you can absolutely stick with that. Whatever helps you estimate most quickly is the best choice.

→ Use the indicated method to find the sale prices below. Don't forget to round up to the nearest whole number to help you mentally calculate! (Hint: Sometimes, rounding to the nearest tens place will give you an easier number to work with mentally. Just know that it will give you a less accurate estimation.)

Method #1 Sale Price

$$40\% \text{ off } \$21.98 = \$ \underline{\hspace{2cm}}$$

$$25\% \text{ off } \$69.99 = \$ \underline{\hspace{2cm}}$$

$$15\% \text{ off } \$82.00 = \$ \underline{\hspace{2cm}}$$

$$5\% \text{ off } \$23.99 = \$ \underline{\hspace{2cm}}$$

$$70\% \text{ off } \$256.00 = \$ \underline{\hspace{2cm}}$$

Method #2 Sale Price

$$25\% \text{ off } \$63.89 = \$ \underline{\hspace{2cm}}$$

$$40\% \text{ off } \$84.49 = \$ \underline{\hspace{2cm}}$$

$$20\% \text{ off } \$25.00 = \$ \underline{\hspace{2cm}}$$

$$30\% \text{ off } \$489.99 = \$ \underline{\hspace{2cm}}$$

$$60\% \text{ off } \$34.89 = \$ \underline{\hspace{2cm}}$$